The Web Based Hoestar Equipment Health intelligent Prognostic System (EHiPS) is an interactive automated software application combining Data Mining and Analytics that enables a utility to combine asset data, domain expert knowledge and experience to assess the condition of each individual asset.

EHiPS has a growing reference asset databases comprising of more than 60000 equipment from various manufacturers,of various ages and conditions and this unique database is used to calibrate and assess any available asset condition data.

With initimate knowledge of the condition of assets, EHiPS is equipped with a powerful Equipment Health Indices (EHIs) to make smart decisions for power asset management.

Benefits of using EHiPS :

- *Enables smarter maintenance and replacement decisions.*
- *Reduces operational and downtime costs.*
- *Optimize knowledge and gain insight of other companies equipment condition via benchmarking.*
- *Informative and smart report generation.*

EHiPS uses a series of Smart Algorithms to derive Equipment Condition Indices (EHI) for each individual asset. The EHI is derived based on many different parameters like PD magnitudes, pulse count, Harmonics content , vibrations levels, temperature etc. EHiPS uses 3 powerful EHI algorithms to assess condition, performance and risk of failure for each equipment.
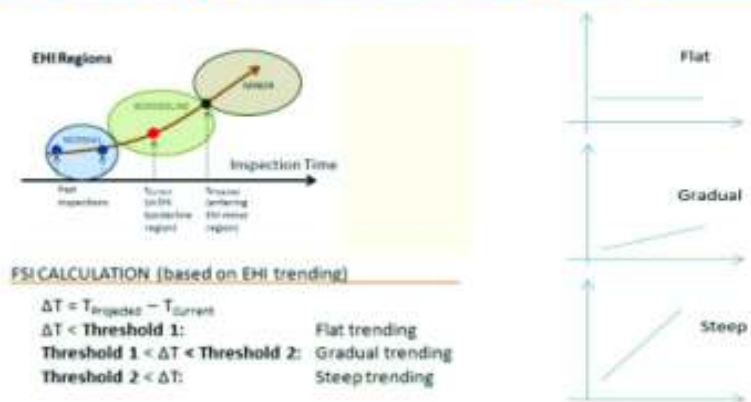
The 3 different classes of Equipment Health Indicator (EHI) are:

1) **Rule based EHI**	–	*Condition of Equipment is determined by a set of predefined rules.*
2) **Machine Learning EHI**	–	*Condition of Equipment is determined by machine learning (Fuzzy and Neural Reasoning from databases)*
3) **Fault Severity Indicator (FSI)**	–	*Defined based on similar rules in EHI but includes historical trending slope that includes other parameters such as temperature, humidity, loading etc. This is important in determining the root cause of a problem.*
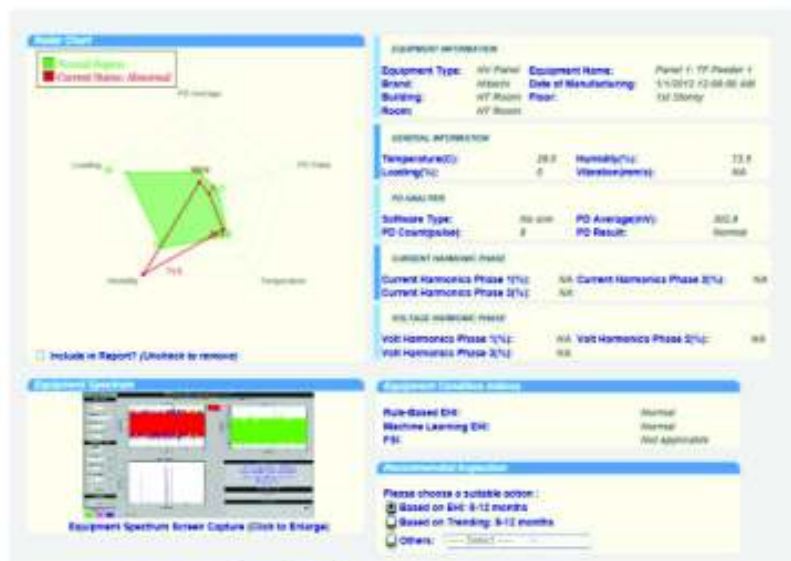
Based on EHI conditions, expert follow up actions (Re-inspection schedules) are also proposed in the final report.

Fault Severity Indicator (FSI)

FSI CALCULATION (based on EHI trending)

$\Delta T = T_{Projected} - T_{Current}$

$\Delta T <$ **Threshold 1**:	Flat trending
Threshold 1 $< \Delta T <$ **Threshold 2**:	Gradual trending
Threshold 2 $< \Delta T$:	Steep trending

Three (3) category of FSI: (i) Flat Trending , (ii) Gradual Trending and (iii) Steep Trending.

(i)   Flat Trending   - *Slow change severity degradation.*
(ii) Gradual Trending - *Mediocre change severity degradation.*
(iii) Steep Trending   - *Fast change severity degradation.*

Together with EHI, FSI provides a complete solution to prognostic health management. In particular, FSI tracks the progress of fault severity in terms of partial discharge in order to improve maintenance decision to ensure reliable and continuous operation with optimal equipment life usage."

Historical and Benchmarking Chart
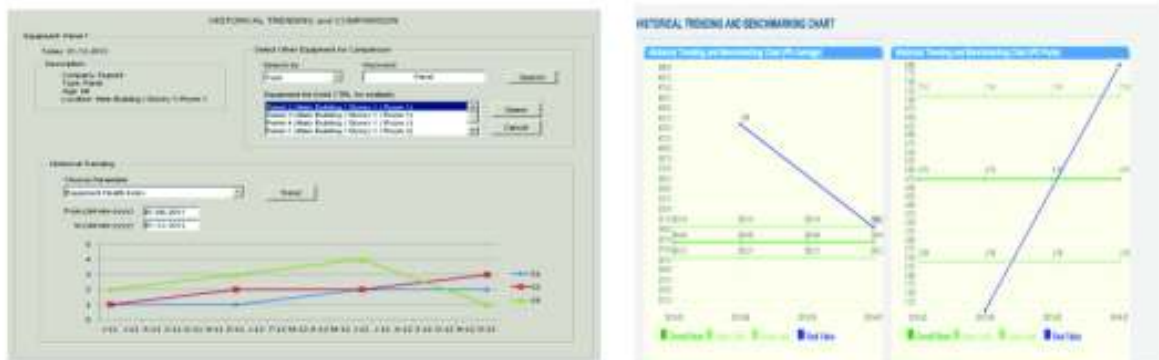
Trending of any one of EHI parameters (Partial Discharge magnitudes, Partial Discharge count) can be displayed on a chart for studying the trend over time and for more informed decision making.

Benchmarking Chart (Local and Global) to compare similar equipment of different companies in Hoestar databases and Statistical Chart Analysis will show how client own equipment fare against other companies equipment. Coupled with the fact that the age of the equipment can be captured would show the relationship between aging and the equipment condition over time.

Please contact us with your enquiries at

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